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ROYAL BOTANIC GARDENS, KEW.

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XXXVI.—NEW PLANTS FROM TROPICAL AND SOUTH AFRICA COLLECTED BY ARCHDEACON F. A. ROGERS.

N. E. Brown.

In the course of naming a collection of plants made by Archdeacon F. A. Rogers in South-eastern Congo, Rhodesia and South Africa, numerous species were found to be unrepresented in either the Kew or British Museum Herbaria and could not be identified from books; they are therefore presumed to be undescribed, and those of which the material is adequate are described below. They give evidence of the wealth of new plants that doubtless yet remain to be discovered in those regions.

Type specimens of all of them have very generously been presented to the Kew Herbarium by Archdeacon Rogers.

A few additional species met with in the course of working out Archdeacon Rogers' plants have also been included.

Ionidium Thorncroftii, *N. E. Brown* [Violaceae-Violeae]; *I. enneaspermo*, Vent., affinis, sed humilior, rhizomate perenni, caulibus pubescentibus, foliis latioribus, et pedicellis longioribus differt.

Herba perennis 9–12 cm. alta, rhizomate tenui reptante. *Caules* subfasciculati, erecti, 0·5–1 mm. crassi, internodiis 0·5–1·5 cm. longis, pilis minutis patulis curvatis pubescentes. *Folia* 2–4 cm. longa, 0·8–1·5 cm. lata, oblanceolata, acuta, inferne longe cuneata, dentata, petiolo brevissimo, utrinque glabra; stipulae 1–1·5 mm. longae, subulatae. *Pedicelli* axillares, 1·2–2·5 cm. longi, graciles, puberuli, prope apicem recurvati et bibracteati. *Bracteae* 1·5–2 mm. longae, subulatae. *Sepala* 4–4·5 mm. longa, 1·5 mm. lata, anguste oblonga vel oblongo-lanceolata, obtusa, apiculata, glabra. *Petala* superiora 4–6 mm. longa, 1·5–2 mm. lata, falcata, obtusa, marginibus incurvis; petalum inferum 1·2–1·3 cm. longum, 0·7 cm. latum, orbiculato-spathulatum, obtusum, integrum, concavum. *Stamina*

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2 mm. longa. *Ovarium* subglobosum vel ellipsoideum, stylo curvato clavato truncato. *Semina* immatura levia, ut videtur haud costata.

South Africa. Transvaal: on a hill-side at Reimers Creek, Barberton, 1050 m., Nov. 1920, *G. Thorncroft* 1086.

The flowers are stated to be pale blue. This species is readily distinguished from *I. enneaspermum*, Vent., which it somewhat resembles, by its creeping perennial rhizome, pubescent stems and longer pedicels. The seeds are immature, but appear to be smooth and quite destitute of the ribs seen on those of *I. enneaspermum*.

Sterculia Rogersii, *N. E. Brown* [Sterculiaceae-Sterculieae]; *S. triphacae*, R. Br., affinis, sed ramis gracilioribus, foliis minoribus breviter petiolatis et subtus minutissime albo-tomentosis differt.

Rami 3–5 mm. diametro, primum puberuli, demum glabri, cortice cinereo-brunneo. *Folia* alterna vel ad nodos fasciculata; petiolus 0·5–1·5 cm. longus, minute puberulus; lamina 1·5–4 cm. longa, supra viridis, minute stellato-pubescens, subtus albida, minutissime stellato-tomentosa. *Flores* (masculi tantum visi) fasciculati, in ramulos breves laterales ramorum efoliatorum dispositi. *Pedicelli* 4–5 mm. longi, minute stellato-tomentosi. *Calyx* 3–3·3 cm. diametro, extra minute stellato-tomentosus; discus patelliformis, intra glaber; lobi 1–1·2 cm. longi, 6–7 mm. longa, incurva.

Tropical Africa. Northern Transvaal: Messina, *F. A. Rogers* 22110, and also without locality 19352, 22242.

Triumfetta humilis, *N. E. Brown* [Tiliaceae-Grewieae]; affinis *T. hirsutae*, Sprague et Hutch., sed humilior, caulibus crassioribus dense tomentosis et foliis utrinque densius stellato-tomentosis differt.

Herba nana, erecta, 5–12 cm. alta. *Caules* 3–8 cm. alti, 3·5–5 mm. diametro, densissime fulvo-tomentosi, superne paucifoliati, inferne stipulis paucis magnis ovatis brunneis instructi. *Folia* patula; petioli 2–4 mm. longi; laminae 2–3 cm. longae, 0·7–1·2 cm. latae, oblongae vel lanceolato-oblongae, acutae vel subacutae, basi subcuneatae, irregulariter crenato-dentatae, supra pubescentes, subtus dense fulvo-tomentosae; stipulae 5–11 mm. longae, superiores 2·5–4 mm. latae, ovatae vel lanceolatae, acutae, inferiores late ovatae, obtusae, vel apice 2–3-dentatae brunneae, subtomentosae. *Cymae* compactae, 2·5–3·5 cm. diametro, dense multiflorae. *Pedicelli* 2–3 mm. longi, fulvo-tomentosi. *Sepala* 5, 7–10 mm. longa, 2–2·5 mm. lata, oblongo-linearia, obtusa, brunneo-apiculata, extra dense fulvo-tomentosa. *Petala* 5, circiter 6–8 mm. longa, 4 mm. lata, obovata, apice rotundata, lutea. *Stamina* circiter 25, petalis breviora. *Ovarium* dense hirsutum, stylo filiformi glabro.

Tropical Africa. Northwestern Rhodesia: Mazabuka, July 3, 1920, *F. A. Rogers* 26138.

Triumfetta misella, *N. E. Brown* [Tiliaceae-Grewieae]; affinis *T. rhodoneurae*, K. Schum., sed floribus duplo minoribus facile distinguitur.

Herba perennis 1–2 dm. alta. *Caules* erecti, 2–2·5 mm. diametro, fulvo-villosi. *Folia* sub anthesi vix expansa, in fasciculos ovoideos gemmiformes coarctata, 1–2 cm. longa, linearia, acuta, crenato-dentata, pilis stellatis fulvo-hirsuta. *Cymae* terminales, subpaniculatim dispositae, multiflorae, ramulis pedicellis calycibusque fulvotomentosis. *Pedicelli* 1·5–2 mm. longi. *Sepala* 5, circiter 6 mm. longa, 1–1·5 mm. lata, oblongo-linearia, brunneo-apiculata. *Petala* 5, circiter 4 mm. longa, 2 mm. lata, obovato-elliptica, apice rotundata, lutea. *Stamina* circiter 30–35, petalis breviora. *Ovarium* dense hirsutum, stylo filiformi glabro.

Tropical Africa. South-eastern Congo: Elisabethville, *F. A. Rogers* 26337.

This and *T. humilis*, N. E. Brown, above described, belong to the same group of the genus. Both plants evidently produce annual stems from a perennial rootstock. *T. misella* is taller, has more slender stems, narrower leaves and smaller flowers than *T. humilis*, but is otherwise similar in habit.

Triumfetta Rogersii, *N. E. Brown* [Tiliaceae-Grewieae]; species distincta ex affinitate *T. hirsutae*, Sprague et Hutch., sed foliis linearibus subdentatis et floribus minoribus differt.

Herba perennis, multicaulis, ad 1·8 dm. alta. *Caules* erecti, 1–2 mm. diametro, herbacei, pilis stellatis minutis et aliis longioribus pubescentes. *Folia* 1·2–2·5 cm. longa, 2–4 mm. lata, linearia, acuta, versus apicem denticulata, ciliata, supra glabra, subtus nervis pilis stellatis instructa, petiolo 1 mm. longo; stipulae 2–3 mm. longae, subulatae. *Cymae* terminales, multiflorae. *Pedunculus* 1·5–4 cm. longus, pubescens; pedicelli 1–3 (sub fructu 4–6) mm. longi, minute stellato-tomentosi. *Sepala* 4–5, minute stellato-tomentosa, 5–6 mm. longa, 1·5–2 mm. lata, spathulato-oblonga, apice brevissime cornuta. *Petala* 4–5, late obovata, obtusa, 4–4·5 mm. longa, 3–3·5 mm. lata, glabra, lutea. *Stamina* circiter 25–27. *Fructus* (setis 4–5 mm. longis inclusus) 1·3–1·5 cm. diametro; setae pilosae, apice substellato-barbatae.

Tropical Africa. South-eastern Congo: Elisabethville, June, 1920, *F. A. Rogers* 26263.

Crotalaria marginata, *N. E. Brown* [Leguminosae-Genisteae]; affinis *C. incomptae*, N. E. Brown, sed foliis angustioribus marginibus incrassatis et floribus minoribus differt.

Suffrutex perennis, 3–5 dm. alta. *Caules* e radice lignoso enati, superne angulati, 1 mm. diametro, inferne lignosi et crassiores, glabri. *Folia* simplicia, 5–7·5 cm. longa, 1–3 mm. lata, linearia, acuta, integra, marginibus incrassatis, glabra

vel inconspicue sparse et minutissime adpresse puberula, petiolo 1–3 mm. longo. *Racemi* 3–8 cm. longi, axillares et terminales, laxiflori, minutissime adpresse puberuli. *Bracteae* 2–2·5 mm. longae, lanceolatae, acuminatae. *Pedicelli* 2 mm. longi. *Calyx* 2·5 mm. longus, subaequaliter 5-dentatus, dentibus 1 mm. longis et latis deltoideis acutis. *Corolla* glabra; vexillum 5–5·5 mm. longum et latum, pallide violaceum?; alae 6·5–7 mm. longae, prope apicem 3 mm. latae, subobovatae, apice obtusissime rotundatae, basi auriculatae; carina 6–7 mm. longa, apice subabrupte acuminata et porrecta nec incurvata. *Ovarium* stipitatum, glabrum, 3-ovulatum.

Tropical Africa. Congo: Elisabethville, *F. A. Rogers* 26286, 26288.

The three species *C. incompta*, *C. filifolia*, and *C. marginata*, are all closely related, but are easily distinguished by their flowers. In *C. marginata* the wings of the corolla are as long as the keel and dilated at the broadly rounded apex. In *C. filifolia* and *C. incompta* the wings are much shorter than the keel, and *C. filifolia* has falcate acute wings, whilst in *C. incompta* they are oblong and obtuse.

Indigofera similis, *N. E. Brown* [Leguminosae-Galegeae]; similis *I. hilari*, Eckl. et Zeyh., sed racemis longioribus et calycis dentibus multo brevioribus conspicue differt.

Herba perennis. *Caules* plures, 1·5–3 dm. alti, 1–1·5 mm. diametro, inferne pilis patulis breviter hispidi, superne minute appresse pubescentes. *Folia* alterna, abrupte pinnata, rhachi 5–8 mm. longa; foliola 2–3-juga, 0·7–1·4 cm. longa, 1·5–3·5 mm. lata, lanceolato-oblonga, mucronato-acuta, utrinque sparse appresse puberula; stipulae 2–3 mm. longae, subulatae. *Racemi* axillares, 2–4 cm. longi, graciles, saepe 10–14-flori, floribus 1·5–3 mm. distantibus, rachi pedicellis calycibusque minute appresse pubescentibus. *Pedicelli* 0·5–1 mm. longi. *Calyx* subaequaliter 5-dentatus; tubus 0·5–1 mm. longus; dentes 2–2·5 mm. longi, subulati. *Corolla* purpurea; vexillum 6–7 mm. longum, 4–5 mm. latum, ellipticum, extra minute appresse pubescens; alae 5–5·5 mm. longae, obtusae; carina 6·5–7 mm. longa, extra minute appresse pubescens. *Ovarium* dense appresse albo-pubescens.

Tropical Africa. South-eastern Congo: Elisabethville, *F. A. Rogers* 26210.

Aeschynomene humilis, *N. E. Brown* [Leguminosae-Hedysareae]; affinis *Ae. pygmaeae*, Welw., sed foliolis majoribus venis obsoletis, stipulis latioribus et pedicellis brevioribus differt, et probabiliter *Ae. katangensi*, De Wild., sed racemis et pedicellis glanduloso-pubescentibus (nec glabris) differt.

Caules 1–2 dm. alti, erecti, simplices vel superne paniculato-ramosi, glanduloso-pubescentes, brunnei, interdum aphylli. *Folia* 0·7–1·3 cm. longa, rachi minute setulosa et glandulosa; foliola 7–10-juga, 3–4 mm. longa, 1 mm. lata, oblonga, mucronata,

glabra, primum glanduloso-ciliata; stipulae 4–6 mm. longae, 1·5–3 mm. latae, ovatae vel ovato-lanceolatae, basi exappendiculatae. *Racemi* 2–6 cm. longi, in paniculam terminalem dispositi vel interdum solitarii, pluriflori, glanduloso-pubescentes. *Bracteae* 3–3·5 mm. longae, ovatae, acutae, striatae, glabrae, glanduloso-ciliatae. *Pedicelli* 1·5–2 mm. longi, glanduloso-pubescentes. *Bracteolae* circiter 3 mm. longae, ovatae, acutae, ciliatae. *Calyx* 6 mm. longus, glaber, sordide purpureus. *Corolla* glabra, carina ciliata excepta, lutea; vexillum 7 mm. longum; alae 8 mm. longae; carina 5 mm. longa. *Ovarium* minute appresse pubescens, stylo 2·5 mm. longo glabro.

Tropical Africa. South-eastern Congo: Elisabethville, *F. A. Rogers* 26160.

Aeschynomene recta, *N. E. Brown* [Leguminosae-Hedysareae]; affinis *Ae. mimosaefoliae*, Vatke, sed caulibus erectis nec patulis et floribus minoribus differt.

Caules 6–8 dm. alti, erecti, porrecti, 2–3 mm. diametro, lignosi, brunnei, dense et breviter setifero-hispidi, ramulis numerosissimis 0·5–2·5 cm. longis instructi. *Folia* perparva, 4–10 mm. longa, rachi appresse setifera; foliola 7–14-juga, 1·5–3 mm. longa, 0·5 mm. lata, subfalcato-linearia, mucronata, glabra; stipulae 2·5–5 mm. longae, 0·5–0·75 mm. latae, linearia-attenuatae vel anguste lanceolatae, mucronatae, basi exappendiculatae. *Racemi* numerosi, 3–6 cm. longi, simplices vel inferne ramulosi, vel foliis vel stipulis instructi, glanduloso-hispidi, adscendentes, in paniculam terminalem dispositi. *Bracteae* 2–3 mm. longae, ovatae, mucronatae, striatae. *Pedicelli* 1–1·5 mm. longi, glanduloso-hispidi. *Bracteolae* 2·5 mm. longae, lanceolatae, acuminatae, minute ciliatae. *Calyx* 4·5 mm. longus, minute hispidus et ciliatus. *Corolla* glabra, lutea, vexillo circa 5 mm. longo, alis 7 mm. longis, carina 4·5 mm. longa ciliata. *Ovarium* minute appresse pubescens, stylo glabro 2 mm. longo.

Tropical Africa. Congo: Elisabethville, *F. A. Rogers* 26162.

Aeschynomene Rogersii, *N. E. Brown* [Leguminosae-Hedysareae]; similis *Ae. glutinosae*, Taub., sed panicula scabrida nec glutinosa et venulis foliolorum indistinctis facile distinguitur.

Suffrutex 4–6·6 dm. altus, ramosus, lignosus, cortice brunneo. *Rami* superne ad paniculam vel racemum plus minusve scabri et glanduloso-pubescentes, inferne glabri, ramulis numerosis brevissimis foliosis axillaribus instructi. *Folia* 5–10 mm. longa, glabra, rachi subtus scabra; foliola 6–12-juga, 2–3·5 mm. longa, subfalcato-linearia, mucronata; stipulae 4–10 mm. longae, anguste lanceolatae, mucronato-acuminatae, basi auriculatae. *Racemi* 6–12 cm. longi, ascendentes, in paniculam terminalem scabrum laxe dispositi vel interdum solitarii, basi plus minusve foliosi. *Bracteae et bracteolae* similes, circiter 3 mm. longae, ovatae, acutae, violaceae. *Pedicelli* 2·5–3·5 (sub fructu ad 5) mm. longi, minute scabri et glandulosi. *Calyx* 6 mm. longus, glaber

non ciliatus. *Corolla* glabra, lutea; vexillum 7 mm. longum; alae 7·5 mm. longae; carina 6 mm. longa. *Ovarium* glabrum, dorso ciliatum, stylo 2 mm. longo glabro. *Legumen* stipitatum, 1–2-articulatum, articulis 6·7 mm. longis 5 mm. latis semicircularibus compressis glabris marginibus incrassatis.

Tropical Africa. South-eastern Congo: Elisabethville, *F. A. Rogers* 26159, 26161.

Adenodolichos nanus, *N. E. Brown* [Leguminosae-Phaseoleae]; *A. pachyrhizo*, De Wild., affinis, sed foliis et floribus majoribus et racemis et pedicellis brevioribus differt.

Caules ad 1 dm. (vel ultra?) longi, erecti, glabri, internodiis 0·5–1 cm. longis. *Folia* alterna, trifoliolata; petioli 4–9 cm. longi; foliola 5–9·5 cm. longa, 3–5·5 cm. lata, rhomboideo-ovata, lateralia obliqua, basi obtusa, apice obtusissima vel emarginata, supra glabra, subtus glabra glandulis minutis aurantiacis parce conspersa, margine et venis prominentibus et parce pubescentibus. *Racemi* ad nodos ramulorum aphyllorum 2–3 cm. longorum subsolitarii, 9–15 cm. longi, pedicellis et calycibus glanduloso-pubescentibus. *Bracteae* 4 mm. longae, anguste lanceolatae, acutae, pubescentes. *Pedicelli* 3–5 mm. longi. *Bracteolae* 1–2 mm. longae, subulatae. *Calycis tubus* 4 mm. longus; lobi 5 mm. longi, lanceolati vel oblongo-lanceolati, acuti, duo superiores ad medium connati. *Corolla* 1·4 cm. longa, glabra, atroviolacea. *Ovarium* puberulum, eglandulosum, stylo glabro apice unilateraliter dense piloso.

Tropical Africa. South-eastern Congo: Elisabethville, *F. A. Rogers* 26212.

The leaves of this plant, being erect, rise to the level of or overtop the stem, and seem large for the size of the plant.

Alistilus, *N. E. Brown* [Leguminosae-Phaseoleae]; genus novum affine *Dolicho*, Linn., sed stylo plano et bialato superne dilatato glabro, stigmate truncato, et foliolis lobatis differt.

Calyx ebracteatus, campanulatus, breviter 5-dentatus, dente infimo acuto, ceteris rotundatis vel obtusis. *Vexillum* orbiculatum apice brevissime bilobum, basi bicallosum. *Alae* prope basin gibbositate oblonga instructae, nec hamatae. *Carina* incurvata, obtusissima. *Stamina* ad medium monadelpha, basi et apice diadelpha, unico libero basi intra appendiculato. *Ovarium* lineare, 5-ovulatum. *Stylus* abrupte inflexus, planus, bialatus, obcuneatus, glaber, stigmate terminali truncato glabro.

Alistilus bechuanicus, *N. E. Brown*; species unica. *Herba* procumbens. *Caules* teretes, ad 3 mm. diametro, puberuli, internodiis 3–7 cm. longis. *Folia* trifoliolata, stipellata; petiolus 2–4 cm. longus, teres, supra canaliculatus, puberulus; foliola 3–6 cm. longa, 2·5–7 cm. lata, utrinque parce puberula, marginibus minute et dense ciliatis; foliola lateralia rhomboideo-biloba, lobo exteriore rotundato, lobo interiore acuto; foliolum medium deltoideum acutum; stipulae 5–6 mm. longae, ovatae, acutae, nervosae, puberulae. *Pedunculi* erecti, 1·5–2·4 dm. longi,

2–2·5 mm. diametro, inferne nudi, superne racemoso-floriferi, puberuli. *Pedicelli* 4–8 mm. longi, puberuli, axillis tuberculiferis. *Calyx* 3·5–4 mm. longus, campanulatus, breviter 5-dentatus, puberulus et minute ciliatus. *Corolla* 1·2 cm. longa, glabra. *Ovarium* 6 mm. longum, minute appresso-pubescens; stylus 6 mm. longus, apice 1–1·3 mm. latus.

South Africa. Bechuanaland: Soshong, *Holub*; Mochudi, *F. A. Rogers* 6311.

The flowers of this plant are similar to those of *Dolichos*, but the prostrate stems, which show no trace of twining, lobed leaves, and the peculiar obcuneate winged style, truncate and glabrous at the apex, sufficiently distinguish it from that genus as well as from *Sphaenostylis*.

Vernonia fraterna, *N. E. Brown* [Compositae-Vernonieae]; *V. Bellinghamii*, S. Moore, simillima, sed capitulis distincte pedunculatis nec subsessilibus majoribus et laxioribus facile distinguitur.

Frutex erectus, ramosus; rami dense tomentosi. *Folia* supra glabra, subtus dense albo-tomentosa; petiolus 6–10 mm. longus; lamina 5–8 cm. longa, 2–5 cm. lata, elliptica vel ovato-elliptica, apice acuta, basi rotundata vel late cuneata, margine minute denticulata vel leviter sinuata. *Corymbi* terminales, circiter 4 cm. diametro, 12–16-cephali, pedunculo 0·6–1·2 cm. longo. *Capitula* circiter 10-flora, 1·2 cm. longa, 7–8 mm. diametro, pedicellata; pedicelli 4–7 mm. longi, tomentosi. *Involucrum* 6–7 mm. longum, ellipsoideo-oblongum, squamis sub-5-seriatis late ovatis obtusis marginibus subtomentellis brunneis; receptaculum minute denticuliferum. *Pappi setae* 5 mm. longae, scabrae. *Corolla* 8 mm. longa, glabra. *Achenia* 4 mm. longa, angulata, striata, glabra.

Tropical Africa. North-west Rhodesia: Bwana M'Kubwa, *F. A. Rogers* 8310; Mukwela, *F. A. Rogers* 26027.

Sphaeranthus Rogersii, *N. E. Brown* [Compositae-Inuloideae]; *S. hirto*, Willd., affinis, sed pedunculis brevioribus, capitulis depresso-globosis et foliis nec spinuloso-dentatis differt.

Herba perennis ad 3·5 dm. (vel ultra?) alta, basi ramosa, molliter villosa. *Rami* erecti, simplices vel superne pauciramosi, conspicue alati. *Folia* sessilia, in alas decurrentia, 3–5·5 cm. longa, 0·6–1·7 cm. lata, superiora minora, oblongo-lanceolata, acuta, dentata, dentibus parvis acutis nec spinulosis, demum subglabrescentia. *Pedunculi* laterales vel terminales, 7–10 mm. longi. *Capitula primaria* circiter 1 cm. diametro, depresso-globosa, purpurea; involucri bracteae 14–16, biseriatae, 5–6 mm. longae, oblongo-lanceolatae, acutae, exteriores mucronatae. *Capitula secundaria* numerosissima, 5 mm. longa; involucri squamae 4–5, oblongo-lineares, obtusae, 4 mm. longae; flores masculi 1–2; flores feminei 3–4.

Tropical Africa. North-western Rhodesia: Mazabuka, *F. A. Rogers* 26359.

Plectranthus leviculus, *N. E. Brown* [Labiatae-Ocimoideae]; *P. tetragona,* Gürke, affinis, sed humilior, floribus minoribus et calycis dentibus longioribus differt.

Herba annua(?), 3·5–4 dm. alta, e basi ramosa. *Rami* erecti, 1·5–3 mm. diametro, quadrangulares, pilis patulis parce pubescentes. *Folia* opposita, 2–2·5 cm. longa, 1–1·5 cm. lata, rhomboideo-ovata, obtusa, basi in petiolum brevissimum cuneate attenuata, paucidentata vel subintegra, utrinque glabra. *Racemi* numerosissimi, axillares, 2·5–4 cm. longi, laxe 10–24-flori, ut pedicelli calycesque glanduloso-pubescentes. *Pedicelli* 2–3 mm. longi, patuli. *Calycis tubus* 1 (sub fructu 3) mm. longus; dentes superiores 1·5 (sub fructu 2) mm. longi; dentes inferiores 2 (sub fructu 3) mm. longi, omnes aristati, porrecti. *Corolla* perparva, 6 mm. longa; tubus 3 mm. longus, basi leviter curvatus; labium superum 1 mm. longum, erectum, subtruncatum, glabrum; labium inferum concavum ciliatum.

Tropical Africa. South-eastern Congo: Elisabethville, June, 1920, *F. A. Rogers* 26211.

The numerous racemes and very small insignificant flowers, which seem to develop one at a time on each raceme, appear to be well-marked characteristics of this species.

Loranthus (Acrostachys) messinensis, *N. E. Brown* [Loranthaceae-Eulorantheae]; *L. Kirkii,* Oliv., affinis, sed foliis carnosioribus, floribus paucioribus laxioribus et duplo longioribus differt.

Rami teretes 5–6 mm. diametro, glabri, internodiis 1·5–4 cm. longis, demum cinerei. *Folia* opposita vel subalterna, crassa, carnosa, glabra; petiolus 1–1·2 cm. longus; lamina 2·5–4·5 cm. longa, 1·5–3·5 cm. lata, ovata vel elliptica, basi cuneata, apice obtusa vel rotundata. *Racemi* 1–1·4 dm. longi, basi 2 mm. diametro, laxiflori, toto glabri. *Pedicelli* 2–3 mm. longi. *Bractea* 1 mm. longa, late ovata, acuta, concava. *Calyx* truncatus, haud denticulatus. *Corolla* 1·8 cm. longa, 2·5 mm. diametro, cylindrica, obtusa; petala 4 vel interdum 3, libera, linearia, exsiccando aurantiaca. *Antherae* 8 mm. longae, biloculares. *Stylus* 1 cm. longus, 4-angulatus; stigma simplex.

Tropical Africa. North Transvaal: Messina, Feb. 1919, *F. A. Rogers* 22568.

Acalypha multifida, *N. E. Brown* [Euphorbiaceae-Crotoneae]; affinis *A. Stuhlmanni,* Pax, sed foliis anguste oblongis vel oblongo-lanceolatis, floribus masculis a flore feminea spatio longo nudo non separatis, et bractea feminea multifida differt.

Herba perennis, monoica vel forsan subdioica. *Caules* erecti, 1–2·5 dm. alti, pubescentes, e rhizomate lignoso orientes. *Folia* erecto-patula; petiolus 1–2 mm. longus, pubescens; lamina 2–7 cm. longa, 0·8–1·6 cm. lata, oblongo-linearia, oblongo-lanceolata vel minora elliptico-lanceolata, acuta, basi obtusa, inferne integra, superne breviter dentata, utrinque pilis conspersis parce pubescentia; stipulae subulatae. *Spicae* axillares, inferiores hermaphroditae et superiores femineae vel

omnes femineae et superiores interdum confertae; spicae hermaphroditae basi floribus femineis 1–3 instructae, deinde pergraciles et masculae, 1–2·5 cm. longae, floribus masculis et femineis contiguis. *Bractea* 7–10 mm. longa, ad medium multifida, dentibus 3–6 mm. longis subulatis acutis pubescentibus. *Ovarium* pubescens. *Styli* 8 mm. longi, filiformes, longe ciliati. *Capsula* 5 mm. diametro, pubescens. *Semina* 2·5 mm. longa, ellipsoidea, levia, glabra, brunnea.

Tropical Africa. South-eastern Congo: Sakania, *F. A. Rogers* 13879.

Ficus cognata, *N. E. Brown* [Moraceae]; affinis *F. Spragueana*, Mildbr. et Burr., sed cortice fusco, foliis majoribus obtusioribus, venis primariis subtus vix et secundariis haud prominentibus differt.

Rami juniores plus minusve puberuli, demum glabri, cortice fusco. *Folia* chartacea, glabra; petiolus 1·3–2·8 cm. longus; lamina 6·5–10·5 cm. longa, 2·5–5 cm. lata, oblonga, vel leviter obovato-oblonga, apice obtusa, basi angustata, obtusa, costa subtus prominente convexa, venis primariis utrinque circiter 10–15 levissime prominentibus secundariis haud prominentibus subtiliter reticulatis. *Receptacula* axillaria, globosa, 8–9 mm. diametro, pedunculis 2–4 mm. longis, dense albotomentosa: ostiola poriformia, linearia. *Bracteae* basilares 3, latissime ovatae, pubescentes.

Tropical Africa. Congo: Elisabethville, *F. A. Rogers* 26167.

This species is also allied to *F. basarensis*, Warb., but has much firmer leaves, with the veins much more finely reticulated, and the figs are shortly stalked, not sessile as in that species.

Acidanthera holostachya, *N. E. Brown* [Iridaceae-Ixieae]; comb. nov.—*Lapeyrousia holostachya*, Baker in *Kew Bull.* 1894, p. 391.

Tropical Africa. Nyasaland: Fwambo, *Carson* 14.

This and the following species were described by Mr. Baker under the genus *Lapeyrousia*, from which they differ in habit and by their undivided (not bifid) stigmas. The segments of the perianth are slightly more unequal in width than in most of the species of *Acidanthera* and these two species and a new one (*A. lomatensis*), described below seem to form a connecting link between *Acidanthera* and *Gladiolus*, for there are some species of *Gladiolus* that have their perianth-segments scarcely, if any, more unequal than they are in the type of the genus *Acidanthera*. The very long and slender tube of the flowers of the latter genus seems about the only character that really separates the two genera, and that is very marked in all the species, being very much longer than the spathes, whilst in *Gladiolus* it is rarely much longer and often shorter than the spathes.

Acidanthera leptostachya, *N. E. Brown* [Iridaceae-Ixieae], comb. nov.—*Lapeyrousia leptostachya*, Baker, Handb. Irid. p. 170,

South Africa. Transvaal: Lydenburg Div.; Macmac, *Mudd.*

Acidanthera lomatensis, *N. E. Brown* [Iridaceae-Ixieae]; *A. leptostachyae*, N. E. Brown, similis, sed spathis majoribus et perianthio duplo longiore facile distinguitur.

Planta circiter 4–4·5 dm. alta, omnino glabra. *Bulbus* circa 1 cm. diametro. *Folia* 4-6, adscendentia, 1·5–1·7 dm. longa, 4–8 mm. lata, linearia, acuta, tenuia, uninervia. *Spica* simplex vel 2–3-ramosa, laxa, floribus 0·8–1·5 cm. distantibus. *Spathae* 1–1·7 cm. longae, lanceolatae, acuminatae, virides, membranaceo-marginatae. *Perianthium* siccato pallide caeruleo-purpureum; tubus 2·5–4 cm. longus, gracilis; segmenta 1·2–1·3 cm. longa, segmento superiore 3–3·5 mm. lato lanceolato acuto levissime galeato, ceteris multo angustioribus linearibus acutis. *Stamina* perianthio breviora; antherae 4 mm. longae. *Stylus* staminibus subaequilongus; stigmata 2·5 mm. longa, compressa, integra.

South Africa. Transvaal: Lomati Valley; near Barberton, among rocks, 1200 m., Nov. 1919, growing with *Begonia Dregei* (?) *G. Thorncroft* 1065.

Gladiolus nudus, *N. E. Brown* [Iridaceae-Ixieae]; species ab omnibus sectionis *Hebeae* caulibus aphyllis facile distinguitur. *Planta* 4·5–5 dm. alta. *Caulis* circiter 1·5 mm. diametro, circiter quinque vaginis striatis aphyllis vestitus, superiore et inferiore glabris ceteris pilis patulis tenuiter conspersis. *Spica* circiter 9 cm., longa, 6–7-flora, secunda, floribus 1–2 cm. distantibus. *Spathae* 1–1·3 cm. longae et circiter 4 mm. latae, glabrae. *Perianthium* 2–2·5 cm. diametro, luteum, viridi-tinctum; tubus 1 cm. longus, apice 2 mm. diametro; lobi unguiculati, unguibus 3–5 mm. longis, laminis elliptico-ovatis obtusis apiculatis, tribus superioribus 1·5–1·7 cm. longis et 1–1·3 cm. latis, tribus inferioribus minoribus. *Stamina* perianthio breviora; antherae 7 mm. longae. *Stylus* staminibus subaequilongus.

South Africa. Transvaal: near Barberton, Oct. 1919, *G. Thorncroft* 1067.

Upon the label the flowers are stated to be "yellow, tinged green," but those of the dried specimens appear to have the five lower segments of a dull and somewhat greenish-yellow, and the dorsal segment of a pale purplish hue, and there are some blackish-purple spots at the base of the claws of the lower segments.

Asparagus longicladus, *N. E. Brown* [Liliaceae-Asparageae]; *A. retrofracto*, Linn., affinis, sed ramulis puberulis et cladodiis duplo longioribus differt.

Caules teretes, scandentes, glabri, brunnei; ramuli deflexi, primum puberuli et virides, demum glabri et brunnei. *Cladodia* numerosa, dense aggregata, 4–5 cm. longa, 0·3 mm. crassa, subfiliformia, acuta, glabra. *Folia* basi in spinas deflexas 2–5 mm. longas brunneas producta. *Pedunculi* plures, 2 mm. longi. *Flores* umbellati? *Pedicelli* 5·5–6 mm. longi, supra medium articulati. *Perianthium* emarcidum 2·5 mm. longum.

Tropical Africa. Southern Rhodesia: Victoria Falls; 900 m., *F. A. Rogers* 5523.

The flowers of this species appear to be arranged in few-flowered umbels, but only two withered flowers were found on the specimen, each on a separate peduncle, all the others having fallen off.

Drimiopsis atropurpurea, *N. E. Brown* [Liliaceae-Scilleae]; species floribus atropurpureis ab omnibus differt.

Folium unicum, semper ?; petiolus 7–12 cm. longus, piloso-pubescens; lamina 9–15 cm. longa, 5–7 cm. lata, elongato-ovata, basi leviter cordata, apice acuta, supra glabra, subtus piloso-pubescens. *Scapus* 1·8–3 dm. longus, subgracilis, 1–2 mm. diametro, piloso-pubescens. *Racemus* 2·5–7 cm. longus, dense multiflorus, floribus inferioribus minutis abortivis delapsis, superioribus perfectis adscendentibus. *Bracteae* nullae. *Pedicelli* 1 mm. longi. *Perianthium* 3·5 mm. longum, campanulatum, glabrum, atropurpureum; segmenta oblonga, 3 exteriora acuta, apice incurva, 3 interiora obtusa et breviter bifida, cucullata. *Stamina* inclusa; antherae pallide luteae. *Ovarium* pallidum, stylo 1 mm. longo.

South Africa. Transvaal: in the shade of bushes at Roses Creek, near Barberton, Nov. 1920, *Thorncroft* 1083.

Scilla lauta, *N. E. Brown* [Liliaceae-Scilleae]; *S. polyanthae*, Baker, affinis, sed foliis acutioribus, racemo angustiore, et floribus pallide roseis conspicue differt.

Folia erecto-patula, basi in collum 0·8–1 dm. longum convoluta, supra collum 1–2 dm. longa, inferna 4–5 cm. lata, late canaliculata, attenuato-lanceolata, apice convoluto-acuta, glabra. *Scapus* infra flores 1·5–1·6 dm. longus; racemus 0·9–1 dm. longus, 1·5–2 cm. diametro, multiflorus. *Bracteae* abortivae, papilliformes, 0·5 mm. longae. *Pedicelli* 4–5 mm. longi, tenues. *Perianthium* horizontaliter patulum, campanulatum, siccato 4 mm. longum, pallide roseum; segmenta late linearia, apice acuta, inflexa. *Stamina* perianthio breviora; filamenta purpurea; antherae violaceae.

South Africa. Transvaal: Pietersburg Div.; The Downs, Oct. 1918, *F. A. Rogers* 23990.

Scilla lepida, *N. E. Brown* [Liliaceae-Scillcae]; *S. aggregatae*, Conrath, similis, sed foliis ciliatis et pedunculo pubescente facile distinguitur.

Planta parva. *Bulbus* ad 1·5 cm. diametro, ovoideus vel subglobosus. *Folia* saepe 2–3, suberecta, 3–5 cm. longa, 3–8 mm. lata, lanceolata, acuta, basi attenuata, minute ciliata. *Scapus* infra flores 3–5 cm. longus, minute pubescens; racemus 1–1·5 cm. longus, 1–1·2 cm. latus, breviter oblongus, obtusus, circiter 13–20-florus. *Bracteae* minute dentiformes. *Pedicelli* 2–2·5 mm. longi, patuli, glabri, purpurei. *Perianthium* horizontaliter patulum siccato 3·5 mm. longum, cylindrico-campanulatum, glabrum, intense purpureum; segmenta oblongo-linearia, apice

acuta, inflexa. *Stamina* inclusa; filamenta purpurea; antherae violaceae, polline albo.

South Africa. Transvaal: near the Palala River, Jan. 1918, *Breyer in Herb. F. A. Rogers* 24009.

Scilla sodalicia, *N. E. Brown* [Liliaceae-Scilleae], nom. nov.—*S. socialis*, Chevalier in Bull. Soc. Bot. France. lv. Mém. 8, p. 94 (1908), non Baker.

Tropical Africa. Middle Shari Region: Ngara, *Chevalier* 8425; Goundi, *Chevalier* 8607.

The name *S. socialis* was used by Baker (in Saunders, Refugium Botanicum, iii, t. 180) in 1870 for a South African species.

Ornithogalum longivaginatum, *N. E. Brown* [Liliaceae-Scilleae]; *O. Saltmarshei*, Baker, similis, sed bulbo minore, foliis scapo equilongis vel longioribus, et vaginis longissimis differt.

Bulbus circiter 1·8 cm. diametro, globosus. *Folia* 2, circiter 3 dm. longa, 2–4 mm. lata, scapo aequilonga vel longiora, erecta, vagina 2–2·5 dm. longa, linearia, subobtusa, glabra. *Scapus* supra vaginae 1·2–3 dm. longus, 1·5–2 mm. diametro, teres, glaber. *Racemus* 2–5 cm. longus, 1·8–2 cm. diametro, densiflorus. *Bracteae* 7–10 mm. longae, ovato-lanceolatae, longe acuminatae, membranaceae, albae, rubro-carinatae. *Pedicelli* patuli, 5–6 mm. longi, glabri. *Perianthium* 5–6 mm. longum, campanulatum, segmentis oblongis apice subcucullatis albis dorso pallide rubescente univittatis. *Capsula* 4–4·5 mm. longa, 6–8 mm. lata, acute triquetra, rubro-brunnea, glabra. *Semina* irregulariter angulata, glabra, nigra.

South Africa. Transvaal: Palala River, Jan. 1918, *H. G. Breyer in Herb., F. A. Rogers* 24011.

Mariscus chersinus, *N. E. Brown* [Cyperaceae-Scirpeae]; *M. Sieberiano*, Nees, affinis, sed spiculis duplo crassioribus conspicue differt.

Folia 2–4 dm. longa, 2·5–5 mm. lata, linearia, acuta, margine leviter scabrida. *Culmus* 2·5–4 dm. longus, triangularis, glaber. *Umbella* 5–10-radiata, foliis 3–7 involucrata; radii 1–6 cm. longi. *Spicae* 1–2 cm. longae, 6–7 mm. latae, cylindricae, obtusae. *Spiculae* dense confertae, patulae, turgide compresso-fusiformes, 3 mm. longae, 1 mm. crassae, uniflorae, glumis fertilibus carinatis explanatis late ovatis acutis pallidis viridi-carinatis. *Achenia* 2 mm. longa, 1·25 mm. lata, obovata, acute triangularia, levia, brunnea, nitidula; stylus trifidus.

Tropical Africa. Ngamiland: Kwebe Hills; in dry places amongst rocks, 990 m., *Mrs. E. J. Lugard* 142.

South Africa. Bechuanaland: at Mochudi near the Transvaal border, *F. A. Rogers* 6310.

Scirpus confusus, *N. E. Brown* [Cyperaceae-Scirpeae]: *S. Rogersii*, N. E. Brown, similis, sed setis nullis, nucis angulis distincte transversim rugosis vel denticulatis, et patria differt.

Culmi dense caespitosi, erecti, 3·5–7·5 dm. alti, 2·3 mm. diametro, teretes, striati, basi vaginibus 7–14 cm. longis obtusis

vel mucrone minuto serrulato terminatis vestiti. *Spicae* laterales, 5–11 cm. infra apicem culmorum dense conferti, 5–9 mm. longi, 2·5–3 mm. crassi, cylindrico-ovati, acuti. *Glumae* 2·5–3 mm. longae, 1·5 mm. latae, ovatae, mucronato-acutae, apice erectae, pallide brunneae, apice marginibusque castaneae. *Setae* nullae. *Nux* 1·5 mm. longa, 1·25 mm. lata, late obovata, truncata, breviter apiculata, triangularis, faciebus planis et angulis prominente transversim rugosis, nigra. *Stylus* 1·25 mm. longus; stigmata 3, circiter 1·5 mm. longa.—*S. supinus* var. *uninodis*, C. B. Clarke in Dyer, Fl. Trop. Afr. viii. p. 453, non C. B. Clarke in Hook. f. Fl. Brit. Ind. vi. p. 656.

Tropical Africa. Abyssinia: Amogai, 2160 m., *Schimper* 253.

This species was identified by Mr. Clarke with the Indian plant he had previously described as *S. supinus*, var. *uninodis*, but it very conspicuously differs from that plant not only in stature, habit and general appearance, but also in structural details. And both this and the Indian plant distinctly differ from the Egyptian *Isolepis uninodis*, Delile, with which Mr. Clarke has supposed them to be identical; for besides the difference in locality and appearance, the Egyptian plant differs in having only two stigmas.

Scirpus Rogersii, *N. E. Brown* [Cyperaceae-Scirpeae]; *S. supino*, Linn., affinis, sed multo elatior et robustior, umbellis radiatis et glumis longioribus acutis differt.

Culmi caespitosi, 4·5–6 dm. alti, 2·5–3 mm. diametro, teretes, apice acuti, glabri. *Vaginae* obtusae breviter mucronatae, glabrae, virides, late membranaceo-marginatae. *Umbellae* 3–5 cm. infra apicem culmorum laterales, e 5–6 fasciculis spicarum 1–1·5 cm. diametro compositae, fasciculorum unus sessilis ceteri radiis 0·2–1·2 cm. longis suffulti. *Spiculae* 5–7 mm. longae, 2–2·5 mm. crassae, conico-ovatae, acutae. *Glumae* 3 mm. longae, ovatae, mucronatae, apice acutae non recurvatae, carinatae, submembranaceae, glabrae, pallide badiae, apice nigro-brunneae. *Setae* 4–5, nuci subaequilongae, leviter barbatae. *Nux* circiter 1·5 mm. longa et 1·25 mm. lata, late obovata, truncata, breviter apiculata, triangularis, faciebus planis lineis impressis irregularibus transversis notatis, angulis levibus, nigra, nitida. *Stylus* 0·5 mm. longus; stigmata 3, circa 2 mm. longa.

Tropical Africa. Southern Rhodesia: Matopos, May 1915, *F. A. Rogers* 7914.

This is very similar in general appearance to the Abyssinian plant described above as *S. confusus*, N. E. Brown, but differs from that by the presence of long setae under the nut, the very short style and the smooth angles of the nut.

XXXVII.—FLOWERING OF ARUNDINARIA FALCATA IN THE TEMPERATE HOUSE.

J. S. Gamble.

Recent visitors to the Temperate House may have noticed, in several places, the interesting event of the flowering of *Arundinaria falcata*, Nees, one of the small bamboos of the Western Himalaya. The drawings by Miss D. K. Hughes, which accompany this note, will give an idea of the flowers. They bring out the peculiar feature that the panicles from the lower nodes of the flowering culm are lax and much branching, while those from the upper nodes are of the ordinary fascicled type as is figured in Plate II of the "Bambuseae of British India" and in Fig. 199 of Sir Henry Collett's "Flora Simlensis." The clumps which have now flowered, all at the same time, are practically without leafy culms and will, presumably, die completely when the flowers are over. It is too soon to say whether or not they will afford ripe seed capable of giving plants to replace the old ones.

The history of *Arundinaria falcata* and its confusion, in European nurseries and gardens, with another species, *A. Falconeri*, was fully gone into in Dr. Stapf's paper on "Himalayan Bamboos" published in the "Gardeners' Chronicle" in their numbers for May 14 and 21 and June 4, 1904, and need not again be recapitulated; but there is reason to think that, in spite of the question having been so fully cleared up, there are still to be found cases where the much more common and more hardy *A. Falconeri* is still called in error *A. falcata*. The present note and Miss Hughes' pictures may therefore be of use. *A. Falconeri* was figured in the Botanical Magazine for 1904 in Plate No. 7947, also in Plate 18 of the "Bambuseae of British India."

So far as is known at present, there are 4 species of *Arundinaria* in the North-Western Himalaya and *A. falcata*, Nees, is a comparatively low-level one found in moist valleys and ravines in the undergrowth chiefly of oak forests at from 4000 to 7000 ft. elevation, rarely higher up. It has caespitose stems in close clumps and the culms are slender, up to 10 or 15 ft. long and about half an inch in diameter. They are not much used, unless other stronger kinds are not available. They do not, as has sometimes been stated, die down every year, though, of course, in exceptionally cold winters those not fully protected by overhead cover may sometimes get cut back. This bamboo has been successfully grown at Dehra Dun, alt. 2000 ft., also in the Nilgiri hills of South India at 6000 ft. In this country it can scarcely be called "hardy." Lord Redesdale said that it would only do for the "most favoured spots," and Mr. Bean says that it is "only suitable for the mildest parts of

the kingdom." Here, in the hills of East Hampshire, I have succeeded in keeping it alive for several years with the help of protecting branches in winter and shelter from the north winds, but the upper parts of the culms do get cut back by frost, so that the clumps, though soon recovering and looking very pretty, will probably never grow as tall as those of other species do. In S. Ireland I believe it thrives quite well as I have received specimens from Miss French, of Cuskinny, Co. Cork. Though cut back by the winter frosts it succeeded in flowering in August, 1917, in the garden of Mr. G. W. E. Loder of Wakehurst Place, Ardingly, Sussex; and near this I have seen it in the gardens at Grayswood, Haslemere and Hollycombe, W. Sussex. Mr. Bean, quoted by Dr. Stapf, says that he did not see it in any of the gardens in S. Cornwall that he visited in 1893. In a conservatory it will undoubtedly thrive, witness the fine clumps in the Temperate House at Kew which have given the flowering culms now being discussed. And there, as with other artificially-protected kinds, it gives longer culms with a greater diameter, looking so unlike the plant in its native wilds, that for some years I have had doubts whether it really was the true species.

The other three kinds of *Arundinaria* of the North-West Himalaya are much more hardy. *A. Falconeri*, which has been found as far west as the Tons river in Tehri-Garhwal, is a caespitose species of high elevation as Dr. Stapf has so fully described, is grown in many parts of this country and thrives, though it, too, as Lord Redesdale has remarked for the Midlands, may suffer in very severe winters by having its culms cut back for some distance. I keep very beautiful clumps of it as well protected by branches as I can and, more important still, try to shelter them from cold north winds, those enemies of all but the strongest of shrubs. *A. spathiflora*, Trin., is the commonest and chief species of the North-West Himalayan region and is known as the high-level Ringal, *A. falcata* being the low-level Ringal. It is also a caespitose species, but the clumps grow closely and gregariously in the underwood of the forest, chiefly of spruce and silver fir and deodar, above 7000 ft. It can be at once recognised by the tessellated nervation of the leaves and the yellowish or reddish culms, and is hardy in this country, at any rate in the Southern Districts, but it wants overhead shade and likes well-drained slopes protected from the North.

The last of the four species is *A. jaunsarensis*, Gamble, which was described from leaf and stem specimens gathered in the forest near Mundali in Jaunsar beyond Chakrata at about 7000 to 8000 ft. by Mr. U. N. Kanjieal and myself in 1891. It is at once recognisable by having single stems arising at intervals from a long underground rhizome. I am strongly of opinion that it is the same as the well-known *A. anceps*, Freeman-Mitford, which is hardy in this country and flowered in 1910 in the garden of Mr. C. H. Cave at Mangotsfield near Bristol. Lord Redesdale, in the "Bamboo Garden," p. 181, says that

FIG. 1.

1. lower portion of a stem with part of a long, very loosely flowering branch (natural size); 2. leafy branch, taken from same plant, before flowering set in (natural size); 3. portion of a blade with margin (5 x); 4. spathe (natural size).

FIG. 2.

1. inflorescence from the upper part of the same stem (natural size); 2. spikelet (4 x); 3. lower glume (4 x); 4. upper glume (4 x); 5. valve (flowering glume) (4 x); 6. valvule (palea) (4 x); 3–6 flattoned out.

" it was picked up at the sale of a dead nurseryman's effects by Mr. Jordan, the Superintendent of Regent's Park, who very wisely bought the whole stock." He gives no date, however. Mr. Bean's account of it is different; he says: " introduced by Col. Edmund Smyth* from Garhwal about 1865 and first cultivated at Elkington Hall, Lincolnshire." I have also another account of its origin from the late Mr. T. W. Webber, who was in the sixties of last century a forest officer in Kumaon and whose book " The Forests of Upper India," published in 1902, is an interesting account of work, travel and sport in the Himalaya and Central India at that time. Mr. Webber wrote in May 1907 to Mr. J. W. Oliver, who sent his letter on to me some years later, as follows: " The straight, upright *Arundinaria anceps* (so named at Kew) which I sent you was from seed which I procured myself in Kumaon high up, and it has been growing in the garden here (Athy, Ireland) for 25 years. There is a clump 30 yards round. It sends out lateral suckers and spreads itself rapidly." Mr. Webber, with whom I had already got into communication myself in 1907, sent me specimens of the culms, culm-sheaths and leaves from his clump, and they were undoubtedly *A. anceps*. Mr. Webber was in Kumaon from 1861 to 1864, in which latter year it is probable that the bamboo flowered and seeded, and that Mr. Webber and others collected the seed and distributed it. I think it may be useful to put this information on record. Though I myself believe that the Kumaon *A. anceps* and the Jaunsar *A. jaunsarensis* are the same, we cannot be quite sure until flowers of the latter are available. It is to be hoped that the Forest Botanist to the Dehra Dun Research Institute will keep an eye on the plants at Mundali. The flowers of *A. anceps* are remarkable for having spikelets often 4 ins. long, with 8 to 9 flowers in each, and resemble those of some Japanese species and notably *A. japonica* and *A. Simoni*.

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* According to letters preserved at Kew, written by Colonel Edmund Smyth of Elkington Hall, Louth, Lincolnshire, and dated Nov. 16, and Dec. 18, 1898, he introduced *Arundinaria anceps* between 1862 and 1865. He says he sent a small sack of seeds to his father at Elkington and that when he came home in 1868 he found a large seed bed of plants there about one foot high growing quite vigorously; some of these were distributed amongst various friends. Colonel Smyth observes that the seed was gathered for him by a native official of Joshimuth, in British Garwhal.

XXXVIII.—DECADES KEWENSES

Plantarum Novarum in Herbario Horti Regii Conservatarum.

DECAS CIV.

1031. Berberis Lamberti, *Parker* [Berberidaceae-Berbereae]; affinis *B. Jaeschkeanae*, C. K. Schn., var. *Usterianae*, C. K. Schn., sed foliis duplo majoribus integerrimis, pedunculis pedicellisque longioribus.

Frutex nanus, 6–7·5 dm. altus, ramulis junioribus leviter angulatis glabris, pallide flavis; spinae 1–3-fidae, graciles, 1–1·5 cm. longae. *Folia* fasciculata, lineari-oblanceolata, integerrima, apice pungentia, basi attenuata, sessilia, utrinque glabra, integra, subtus pallida vel fere alba, non papillosa, margine involuta, 2–2·5 cm. longa, 4–7 mm. lata, nervis lateralibus paullo prominulis. *Inflorescentia* subumbellata vel brevissime racemosa; pedunculus 1·5–4 cm. longus; pedicelli 0·5–1·3 cm. longi, basi bracteis minutis ovatis suffulti. *Petala* et *sepala* ignota. *Fructus* 1 cm. longus, ovoideus, ruber, stylo nullo. *Semina* 2–5, ovoidea, brunnea, eleganter lacunosa.

India. N.W. Himalaya: Almora; Humdhura and Ratapani, 2500–2800 m., *W. J. Lambert.*

Apparently a rare species; Mr. Lambert, Deputy Conservator of Forests, Almora, says he has only seen it in the above two places. In leaf this species resembles *B. Osmastonii*, Dunn, but the leaves are rather larger, not so rigid or so white beneath and in *B. Osmastonii* they are densely papillose beneath.

1032. Rinorea Hummelii, *Sprague* [Violaceae]; a ceteris speciebus centrali-americanis inflorescentia composita recedit.

Arbor mediocris. *Ramuli* graciles, annotini cinerei, conspicue lenticellati, circiter 2 mm. diametro; ramuli hornotini viriduli, minute patule pubescentes, 2–4·5 cm. longi, duo paria foliorum gerentes, inflorescentia terminati. *Folia* opposita; petiolo 3–5 mm. longi, supra canaliculati, minute pubescentes; lamina obovata, apice acute acuminata, basi breviter subcuneata, 6–13 cm. longa, 2·5–6·5 cm. lata, acumine 0·6–1·2 cm. longo, subintegra denticulis minimis hinc inde sub lente valida tantum visis, chartacea, discolora, supra praeter nervum medium minute furfuraceo-pubescentem glabra, nervo medio et lateralibus tertiariisque prominulis, subtus glabra, lucidula, rete venularum etiam prominulo areolis dense pallide punctatis; nervi laterales utrinque 7–8, patuli, arcuato-ascendentes. *Racemi* compositi, ramulos hornotinos terminantes et in ramulis annotinis ex axillis foliorum delapsorum orti, 1·5–3 cm. longi, breviter patule pubescentes; rhacheos rami patuli, inferiores usque ad 5-flori; bracteae deltoideae, 1 mm. longae, extra pubescentes, ciliolatae; pedicelli 2 mm. longi. *Sepala* anthesi patentia, late ovata, breviter cuspidata vel apiculata, 1–1·2 mm. longa, 1–1·1 mm.

lata, minute ciliolata. *Petala* lanceolata, obtusa, 4·5 mm. longa, 1·75–2 mm. lata, superne revoluta. *Filamenta* subquadrata, 0·5 mm. longa, 0·6 mm. lata, collo angusto 0·1 mm. longo cum anthera connexa; connectivum anguste lanceolatum, 3 mm. longum, 1–1·1 mm. latum, usque 0·3–0·4 mm. infra apicem antherae adnatum; antherae ovatae, apice minute biapiculatae, 1·5 mm. longae, 0·8 mm. latae. *Ovarium* globosum, 1 mm. diametro, fulvo-velutinum; ovula 2 pro placenta; stylus 3 mm. longus triente inferiore patenter piloso ceterum glaber.

British Honduras. Salt Creek, *Hummel.*

According to Mr. Hummel, this species is a tree of fair size, locally known as "Wild Coffee." The young plants are often mistaken for Mahogany seedlings or saplings.

1033. Gymnosporia Championi, *Dunn* [Celastraceae-Celastreae]; quoad pubescentiam strigulosam *G. puberulae*, Laws., affinis, sed inflorescentia condensata et foliis basi rotundatis diversa.

Frutex robustus, sparse armatus; rami ut folia petioli pedunculique asperuli, cortice rubro-brunneo rugoso. *Folia* ovata, apice rotundata vel nonnunquam obtusa, raro acuta, basi truncata vel rotundata, 5–6 cm. longa, 3·5–4·5 cm. lata, chartacea, pilis brevissimis strigosis utrinque asperula, nervis lateralibus utrinque 10–14, subtus reticulata, margine crebre crenato-serrulata; petioli 3–4 mm. longi. *Cymae* pluriflorae, foliis circiter triplo breviores; bracteae bracteolaeque scariosae, minutae; pedicelli graciles, 0·3–1 cm. longi. *Sepala* 5, 1 mm. longa, minute ciliolata. *Petala* 5, oblonga, obtusa, 3 mm. longa, 2 mm. lata. *Stamina* petalis breviora, glabra. *Discus* conspicuus, glaber. *Ovarium* 2 mm. altum, glabrum; stylus brevis; stigmata 3, patentia; loculi 3; ovula in quoque loculo 2, erecta. *Capsula* 5–6 mm. alta, complanata; valvae 3, apice dehiscentes, transverse rugosae. *Semina* matura non visa.

India. United Provinces; Ramnagar Division, *H. G. Champion.*

1034. Uraria pulchra, *Haines* [Papilionaceae-Hedysareae]; *U. Lacei*, Craib, et *U. paniculatae*, C. B. Clarke, affinis, ab illa habitu tenuiore, indumento, pedicellis multo longioribus, ab hac foliolorum forma, pedicellis longis differt.

Suffrutex subdiffusus, 9–12 dm. altus, ramis pilis fulvis longis et praeterea breviore indumento tectis. *Folia* 3-foliolata, stipulis subulatis setaceis 7–9 mm. longis. *Foliola* oblonga vel elliptico-oblonga, plerumque paulum obovata, apiculata, 7·5–11·5 cm. longa, subtus pilis fulvis parce instructa, basi rotundata, apice admodum rotundata, nervis lateralibus utrinque 7–11 ad marginem pertinentibus. *Flores* albi vel subcaerulei, 1–2-nati, 1 cm. longi, in racemos laxos paniculatos glandulosos 15–40 cm. longos dispositi, pedicellis gracillimis 1·2–1·6 cm. longis. *Calyx* corollae concolor, paucis pilis tenuibus instructus, demum glabrescens, dentibus superioribus fere connatis. *Carina* 1 cm.

longa. *Filamenta* quatuor alternantia breviora, anguste clavata, antheris in exemplaribus nostris destituta. *Ovarium* pilosum; styli parte superiore crassa. *Legumen* pilis glandulisque tectum. *Semina* 5–7.

India. Behar and Orissa; Sameshwar Hills, on the borders of Nepal, *Haines* 3962.

1035. Acacia hydaspica, *J. R. Drumm. MSS. ex Parker* [Leguminosae-Mimoseae]; ab *A. Campbellii*, Arn., ramulis glabris, foliis paucijugis, foliolis leguminibusque majoribus inter alia distincta.

Frutex 1–2 m. altus, ramulis tenuibus glabris, aculeis 1–3 cm. longis rectis eburneis tenuibus. *Folia* 1–4-juga, rachi (petiolo incluso) usque ad 3·5 cm. longa, basi et saepe infra jugum distale glandula orbiculata sessili instructa vel eglandulosa; pinnae 0·5–2 cm. longae; foliola utrinque 4–12, 2·5–4 mm. longa, oblonga, subacuta, basi obliqua, utrinque glabra, nervulis obscuris. *Capitula* axillaria, solitaria vel bina, lutea, 1–1·2 cm. diametro; pedunculi 1–1·6 cm. longi glabri; bracteae 3, ovatae, connatae, 2 mm. longae, supra vel infra medium pedunculi insertae. *Calyx* vix 2 mm. longus, glaber, dentibus minutis. *Corolla* 3·5 mm. longa, glabra, lobis triangularibus minutis ciliolatis. *Stamina* numerosissima, filamentis glabris. *Legumen* 10–15 cm. longum, 7–8 mm. latum, stipitatum, glabrum, suturis parum incrassatis, inter semina leviter constrictum. *Semina* 5–9.

N.W. India. Attock, *Griffith* 1921; Peshawar to Jhelum, *Stewart* 106, 313; Salt Range, *Aitchison* 434, *Drummond* 13,834, 14,564.

Common west of the Jhelum on dry rocky ground. I have not seen this plant in the Punjab plains to the south and east of the Salt Range. It occurs up to about 1000 m. in the foothills of the Himalaya in the Rawalpindi and Hazara districts where it is called by the natives *kikri* or sometimes *babuli*, the diminutives of *kikar* or *babul*, (*Acacia arabica*. Willd.). When not in flower or fruit it might easily be taken for an unhealthy *A. arabica* seedling.

1036. Spiraea diversifolia, *Dunn* [Rosaceae-Spiraeeae]; *S. hypoleucae*, Dunn, affinis, sed foliis surculorum sterilium orbicularibus palmatifidis et inflorescentiis glabris differt.

Frutex ramosus, ramulis gracilibus cortice brunneo-rubro. *Folia* ramorum floriferorum obovata, apice obtusa, trilobata, basi acuta, 2–3 cm. longa, subtus alba, papyracea; petioli 0·5–1 cm. longi; folia surculorum sterilium diversa, circumscriptione orbicularia, in lobos 3 obtusos crenatos profunde palmatim divisa, 4–5 cm. diametro, subtus alba. *Fructuum* pedicelli graciles, 1·5–2 cm. longi, ut fructus glabri, circiter 20 in nodis fasciculati vel paulo racemosi. *Calyx* urceolatus, 2 mm. longus; dentes late triangulares, 1·5 mm. longi, tandem decidui. *Petala* et *stamina* non visa. *Carpella* 5–6, glabra, 2–3 mm. longa.

India. United Provinces: East Almora; Hum and Ralapani, 3000 m., 20. 10. 20., *W. F. Lambert.*

1037. Rubus almorensis, *Dunn* [Rosaceae-Rubeae]; a *R. nutante*, Wall., foliis subtus molliter hirsutis, terminali sessili et stipulis pectinatis differt.

Suffrutex inermis. *Caules* prostrati, debiles, ut petioli pedicelli et calyces breviter tomentosi, sparse setosi; vetusti lignosi. *Folia* ternata vel versus fines ramorum nonnunquam 3-lobata; petioli 4–6 cm. longi; stipulæ liberae, ovatae, profunde pectinatae; foliola sessilia, lobulata, rugulosa, argute serrulata, obtusa vel acuta; terminalia rhomboideo-ovata, basi cuneata, 5–7 cm. longa, 4–5 cm. lata; lateralia obliqua, basi rotundata. *Paniculae* parvae, terminales. *Florum* pedunculi 2–3 cm. longi, bibracteati. *Calyx* 2–2·5 cm. diametro; dentes lanceolati, acuminati, apice foliaceo-incisi. *Petala* alba, 1 cm. longa, late obovata. *Achenia* circiter 6, rubra, sapidissima.

India. United Provinces: Almora; Ramganga below Wimakpani, 2700 m., 9. 10. 20., *W. J. Lambert.*

The discoverer, after making a careful investigation on the spot, thinks that the plant may be a hybrid between *R. nutans*, Wall. and *R. reticulatus*, Hook. f., both of which are common in the district.

1038. Jasminum strictum, *Haines* [Oleaceae-Jasmineae]; *J. Wightii*, C. B. Clarke, affinis, habitu erecto, petiolis brevioribus, foliis angustioribus sed minus acuminatis, calyce pubescente vel puberulo differt.

Suffrutex caulibus ex radice perenne 2–3 erectis strictis 3–6 dm. altis minute-puberulis. *Folia* lineari-lanceolata vel oblongo-lanceolata, sensim acuminata, suberecta, glabra, subtus glandulosa, margine incrassato, nervis lateralibus 8–10 tenuibus; petioli 3–5 mm. longi, articulati. *Cymae* puberulae, circiter 3–5-florae, terminales et ex supremis axillis, pedunculis 0–2 cm. longis suffultae. *Bracteae* setaceae. *Calyx* campanulatus, plus minusve pubescens; tubus 2 mm. longus; dentes inaequales, erecti, lineares, 1–3 mm. longi. *Corolla* alba; tubus 0·9–1·2 cm. longus; lobi 6–10, paulo longiores, lineares, acuminati. *Fructus* non visus.

India. Plateau of Chota Nagpur; 900 m., *Haines* 4312.

1039. Ervatamia caudata, *Gamble* [Apocynaceae-Plumerieae]; *E. Heyneanae*, T. Cooke, affinis, corollae lobis dextrorsum, nec sinistrorsum ut in forma sylvestri Indiae septentrionalis *E. coronariae*, Stapf, obtegentibus, foliis minoribus longissime caudatis et aliis notis differt.

Frutex erectus, ramulis gracilibus pallidis. *Folia* siccitate tenuia, elliptico-obovata, apice longissime caudato-acuminata, basi in petiolum attenuata, glabra, infra pallida, 10–15 cm. longa, 3–5 cm. lata, nervis primariis utrinque 8–12 regularibus marginem versus arcuatis; petiolus circiter 1 cm. longus. *Flores* albidi in cymis 1–2 corymbosis terminalibus dichotomis patentibus;

pedunculi ad 5 cm. longi; pedicelli graciles. *Calycis* tubus glaber brevis, lobis ovatis ciliatis intus glandulosis. *Corollae* tubus gracilis, circiter 2 cm. longus, paullo supra mediam partem incrassatus; lobi ovato-oblongi, dextrorsum obtegentes, sinistrorsum torti, in alabastro fere globosi, margine ciliati, ad 2 cm. longi. *Stamina* inclusa, corollae tubi paullo supra mediam partem affixa, lanceolata, mucronata, filamentis brevissimis. *Stylus* gracilis, supra incrassatus, apiculo bifido. *Folliculi* ovati, 3 cm. longi, longe acuminati, seminibus verosimiliter paucis. *Semina* oblonga, 1·2 cm. longa, postice striata, antice canaliculata, cotyledonibus ovatis.

South India. Anamalai Hills; Udumanparai, *Barber* 5759; at Manamboli, 1200 m. alt., *Fischer* 3378; Hills of Tinnevelly, 700–900 m. alt., *Wight*, *Beddome*, *Barber* 372, *Hooper* and *Ramaswami* 39,408, in evergreen forest.

1040. Petastoma Broadwayi, *Sprague et Riley* [Bignoniaceae-Bignonieae]; calycis forma simile *P. leucopogoni*, Bur., a quo partium fere omnium glabritie, pseudostipulis angustis falcatis, pedicellis apice (seu calyce basi) lepidotis, calycis lobis brevioribus late rotundatisque differt.

Frutex scandens. *Ramuli* multicostulati, juniores lepidoti, seniores fulvescentes, densiuscule lenticellati lenticellis concoloribus, glabrati, nodis dilatatis; internodia 10–15 cm. longa. *Folia* cujusque paris linea pilosa connexa, cirrho terminali caduco bifoliolata; petiolus 1·5–2 cm. longus, apice valde dilatatus, supra praeter basin apicemque pilis erectis valde hirsutus; petioluli 1–2 cm. longi, supra per totam longitudinem valde hirsuti; foliola ovata vel elliptico-ovata, apice acuminata, basi obtusa rotundata vel subcordata, 10–16 cm. longa, 5·5–9 cm. lata, acumine 1·5–2·5 cm. longo, supra juventute sparse lepidota mox glabra, densiuscule manifeste reticulata, subtus in axillis nervorum lateralium fasciculato-pilosa, secus nervos hinc inde sparse patenter pilosa, ceterum glabra, nervis prominentibus, venulis prominulis; nervi laterales utrinque 5–6; pseudostipulae foliaceae, falcatae vel acinaciformes, 1–1·5 cm. longae, subtus pilis majusculis curvatis sparse indutae. *Thyrsi* 2·5–3 dm. longi, inferne foliati, ramis lateralibus patentibus vel patulis pedunculis propriis 3–8 cm. longis; bracteae lineares vel subulatae, 1–5 mm. longae; pedicelli 5–9 mm. longi, sparse lepidoti, apice in basin calycis obconico-incrassati, densiuscule lepidoti. *Calyx* inflato-campanulatus, 7 mm. longus, breviter lobatus, extra pilis curvatis sparse puberulus; lobi late rotundati, 0·75 mm. longi, 3·5 mm. lati. *Corolla* campanulato-infundibularis, 4–5 cm. longa; tubus basalis circiter 1 cm. longus; fauces 2–2·5 cm. longae; lobi 1–1·5 cm. longi. *Stamina* apice tubi basalis inserta, ad et infra insertionem pilis glandulari-capitatis breviter villosa; filamenta longiora 2 cm., breviora 1·5 cm. longa; antherarum lobi divergentes, 2·5–3 mm. longi. *Staminodium* 4 mm. longum. *Discus* pulvinaris, superne medio leviter excavatus, 1·2 mm. altus. *Ovarium* 3 mm. longum,

0·75 mm. diametro, glabrum, olivaceum. *Stylus* 3 cm. longus; stigmata obovato-oblonga. *Ovula* pro loculo biseriata, circiter 20 pro serie. *Capsula* (immatura tantum visa) circiter 3 dm. longa, 1 cm. lata.

West Indies. Trinidad: St. Clair; Knapp Hill, Aug. 1911, *Broadway* 4164 (type); and without precise locality, *Fendler* 517.

Petastoma Broadwayi is the first species of *Petastoma* recorded from the West Indies. It agrees with *P. leucopogon* in the general shape of the calyx, but differs in most other respects, and does not appear to be nearly related to any of the species hitherto described.

XXXIX. THE FLORA OF MADRAS: IV.

The fourth part (pp. 579–768), *Rubiaceae* to *Sapotaceae*, and part of the *Ebenaceae* of the Flora of Madras, has now been published, and the following notes have been drafted by Mr. Gamble. We are indebted to him for the opportunity of placing these on record for the information of workers in herbaria, relative to conclusions with regard to particular species dealt with in the work that differ from those arrived at by earlier writers.

Notes on the Flora of Madras.*

J. S. Gamble.

Rubiaceae. *Oldenlandia.* I have thought it best to follow other botanists and especially K. Schumann in the "Natürliche Pflanzenfamilien" in placing *Hedyotis* under *Oldenlandia* owing to the difficulty in finding characters to keep them separate.

Mussaenda. The rearrangement of the species of this genus follows that which Mr. J. Hutchinson has made in the Kew Herbarium. Mr. Hutchinson kindly placed at my disposal his draft of a Key to the S. Indian and Ceylon species and this has been followed in the main.

Randia. R. dumetorum, Lamk. As a Forest Officer in India I was much puzzled over this species especially after the appearance of Part vii (Vol. iii) of the "Flora of British India." The first form of it whose acquaintance I made about 1873 was a small tree very common in the Sál forests and mixed forests of the Darjeeling Terai. It had thin obovate leaves often 4 to 5 in. long and an apple-like fruit used by the Mechis and Garos and other forest residents for poisoning fish. In forest shade, the spines were usually small and thin, but I remember that they were longer and thicker when the tree was found in open places. I have seen the same form in the

* Previous notes were published in the *Bulletin* for 1916, p. 57, for 1918, p. 222, and for 1920, p. 49.

Sál forests of Dehra Dún and the Siwaliks in the United Provinces, and it extends to the forests of Chota Nagpore and further south to those of Ganjam. There is a specimen collected by Mr. H. H. Haines in the Chanda forests of the Central Provinces at Kew. The late Mr. A. W. Lushington sent me leaves of it collected at Ukroba in the Madgol hills of Vizagapatam at 3000 ft. and I think this must be its southern limit at any rate on the eastern side of the Peninsula. I think there can be very little doubt that it is *Posoqueria longispina*, Roxb. (*Randia longispina*, DC. & W.& A.) figured in Roxburgh's drawing No. 1379 from which Wight's No. 582 was copied, but I must confess that some points of the figures and descriptions do not quite agree with the specimens. The calyx-lobes, for instance, in my Darjeeling Terai specimens are narrow and linear-lanceolate, about ·2 in. long and the slender pedicels reach nearly half an inch, but there is considerable variation in both, so that I think I can consider that the little tree of the Sál forests is *Randia longispina*, DC. for the purposes of the "Madras Flora."

When in 1882, I went to the Madras Presidency, I soon came across a *Randia* of quite different aspect common in the dry thorny scrub forests of the Districts bordering on the East Coast from the Kistna river to Madras. It is a stiff little tree or shrub with strong thorns in pairs, many white flowers turning yellow and small obovate, rather thick leaves rarely more than 1 in. long. This seems to me to be undoubtedly the plant described by Lamarck and figured by him, and it is well represented in Roxburgh's drawing No. 136 and Wight's No. 580. It seems to be the true *Randia dumetorum*, Lamk. It is a small tree or shrub with grey bark and hard close-grained wood and it is found all along the Eastern Coast and inland in the Deccan and Carnatic, extending probably northwards in dry localities, perhaps even to the Ganges. In the scrub forests near the coast the leaves are more or less glabrous, but inland, in the thicker forests of the scarp of the Deccan plateau, they are often quite tomentose. Near the Coast, indeed usually on the Coast sands, is found a form with rather smaller leaves and more fascicled flowers, with slender spines. I feel sure that this is *Posoqueria floribunda*, Roxb. (*Randia floribunda*, DC.) figured in Roxburgh's No. 2198, copied in Wight's Icones as No. 583. But it is scarcely more than a variety of *R. dumetorum*, and it seems to me that *Posoqueria nutans*, Roxb. (Roxburgh Fig. No. 2199—Wt. Ic. t. 581) which was described from a plant cultivated in the Calcutta Botanic Garden is really only *Randia dumetorum* cultivated in a moister climate.

Randia tomentosa, *W. & A.* 388, is only definitely represented at Kew by two very imperfect specimens, both probably from the same gathering, viz.: Wt. Colln. No. 1277 and Wallich Colln. No. 8264A (Herb. Wight & Dindigal) collected by Wight "in dry jungle about 1800 ft. above the sea." The two look

as if they were of the same collecting. The leaves are elliptic-obovate, 1·5–2 in. long and 1–1·5 in. broad, densely softly tomentose beneath, with about 8 pairs of strongly marked nerves, and the fruit is about 1 in. in diameter. Specimens almost exactly matching those of Wight have recently been collected by Dr. Barber at Kollimalai in Trichinopoly (No. 11364) and Hassanur in Coimbatore (No. 10534), and these and other specimens in the Madras Collection which has been lent to me, and the Bourne Collection presented to the Kew Herbarium, belong all to Wight and Arnott's *tomentosa*, I think. In his "Indian Trees," Sir D. Brandis did not mention *R. tomentosa*, W. & A., but he remarked as follows under *R. dumetorum* regarding a form apparently found all down the Western side of the Peninsula: "A remarkable form, possibly a distinct species, with leaves densely velvety beneath, hairy above, secondary nerves prominent, 10–12 pairs, fruit ribbed and crowned with the semi-persistent calyx-lobes. Sattara Ghâts and Mahabaleshwar (D.B.), Sigúr Ghât, Nilgiris (Gamble) is similar to *R. tomentosa*, Bl. of Burma." I think he should have said—"agrees with *R. tomentosa*, W. & A." for *R. tomentosa*, Bl. is clearly quite distinct. After spending considerable time over this question, I have come to the conclusion that almost the whole of the material in the Kew and other Herbaria from the W. Ghâts and Coasts belongs to this species, which is quite distinct from *R. dumetorum*, Lamk.

The species is perhaps more closely related to *R. longispina*, DC., though clearly distinct. As the name *tomentosa* is already occupied, another must be found, and I have called it *R. Brandisii*. The following are the specimens which I consider belong to it:—

Bombay Presidency. Mahabaleshwar Hills (Stocks); Kala Nuddi (Ritchie 346), both in Herb. Kew.

Madras Presidency. Hills near Mangalore, S. Canara (Hohenacker 125, 861); Mysore and Carnatic (G. Thomson); Cochin (Mr. Johnstone); Nilgiris (Wight K.D. 1316); Bolampatti near Coimbatore (Wight K.D. 1317); Ayamallay (Wight K.D. 1319); Anamallai (Wight 1320); also without locality Wight Hb. Propr. 1276, 1277; Dindigul (Wallich 8264A); Pulney Hills (Bourne 978, 1341 and 2337) all in Herb. Kew. Courtallum (Wight—no number); Ayalhatti (Meebold 8996); Nilgiris and Bangalore (H. Cleghorn) all in Herb. Edinb.

Coonoor Ghât Nilgiris (M. A. Lawson); Jahlsur, S. Canara (Barber 2435); Hassan to Barguai, Mysore (Barber 7041); Kollimalai Trichinopoly (Barber 11064); Hassanur, Coimbatore (Barber 10534); Kuppam river, Taliparamba, Malabar (Barber 8792); all in Herb. Madras.

Yedawan, Travancore (Vencoba Row 2878) in Herb. Trav. Sigúr Ghât, Nilgiris, 4000 ft. (Gamble 14506); Bellary (H. Brougham) both in Herb. Gamble.

It will thus be seen that I have divided up into 3 species the plants collected together in the Flora of British India under *R. dumetorum*, viz.: No. 1 *R. dumetorum*, Lamk. a stiff shrub or small thorny tree of the dry, scrub forest of the Eastern side of the Peninsula; No. 2 *R. longispina*, DC. a small tree of the N. Indian Forests extending southwards to the Godavari, and No. 3 *R. Brandisii*, Gamble, a small tomentose tree of the Western side of the Peninsula only.

Lasianthus. Like most of those who have had to deal with this genus I have found it difficult, but Dr. Wight's paper in the Calcutta Journal of Natural History vi (1846) p. 494 has been a great help. I have had, however, to leave several specimens in different Herbaria unidentified. The three species *L. strigillosus*, Hook. f., *L. acuminatus*, Wt., and *L. parvifolius*, Wight have been the most difficult, and with them it has been necessary to ascertain exactly what is the *L. coffeoides* described by P. Fyson in the Kew Bulletin for 1914, as no specimens were available that had been written up by the author. I think, however, that I have correctly judged which of the two specimens on the same sheet that Wight included in his *L. acuminatus* is Fyson's plant, and the excellent Bourne and Saulière specimens will now well represent the species. I wish, however, here to put on record the suspicion that *L. coffeoides* may prove to be only a form of *L. strigillosus*, to which I think it is nearer than it is to *L. acuminatus*.

Compositae. *Anaphalis*. The distinctions between the genera *Anaphalis*, *Gnaphalium* and *Helichrysum* are not very easy to make out, at any rate in dry specimens. This was commented on by Sir J. D. Hooker in the Fl. Br. Ind. iii. 279, and the subject was more fully discussed by Mons. G. Beauverd of the Herbier Boissier in the "Bulletin de la Société Botanique de Genève" 2me. Série, Vol. v. p. 146 (1913) who therein announced an early monograph of the genus *Anaphalis*. Pending the publication of the promised monograph, it has seemed best to adhere as nearly as possible to the arrangement of the Flora of British India. There is, however, one species which requires some explanation, namely, No. 14 *A. oblonga*, DC.

In the "Contributions to the Botany of India" by Dr. Wight (1834) Mons. A. P. de Candolle described two species of *Gnaphalium*, *G. subdecurrens* and *G. ellipticum*, both of which have been included under *Anaphalis oblonga* in the Flora of British India. In 1837, in Vol. vi of the "Prodromus," Mons. de Candolle published his species *A. oblonga* based on a specimen collected in the Nilgiri Hills by Leschenault, and this has been taken as the specific name under which Mons. de Candolle's two Gnaphaliums should be placed. But it seems to me that the earliest specific name is not *A. oblonga* but should be *A. subdecurrens*, and this is the name I have adopted. *Gnaphalium subdecurrens*, DC. was based on Wight's No. 1469 (Herb. propr.) of which there are specimens at Kew in two forms, one as a low

tufted plant evidently and as I can recollect of dry open downs at high elevations, the other a more elongated plant of lower elevations, but belonging, I think, to the same species. What the true *A. oblonga*, DC. is, I am not quite sure, but the description seems to me to agree well with the latter form. In my opinion, *A. elliptica*, DC. Prodr. vi. 274, which is *Gnaphalium ellipticum*, DC. in Wt. Contrib. 21, is a distinct species instead of being a variety, as Hooker made it, of *A. oblonga*, and the other variety *Lawii* is also, I think, distinct, and I have considered it as such in the "Flora of the Madras Presidency."

XL. MISCELLANEOUS NOTES.

The Earl of Ducie, P.C., G.C.V.O., F.R.S., F.G.S., F.L.S.—The death of this veteran arboriculturist in his 95th year will be much regretted by all who knew him. He was the father of the House of Lords, for a very long period the Lord Lieutenant of Gloucestershire and a Vice-President of the Royal Horticultural Society, and in my judgment the best tree-planter in Great Britain. His love of trees began when he was a comparatively young man, succeeding his father 68 years ago to the ownership of Tortworth Court, the most beautiful and one of the best managed estates in the Vale of Gloucester. He at once began to plant not only conifers, which were then the fashion, but all the hardwood trees which he could procure. Many others have done this, but none have, as far as I know, realised to the same degree that it is not enough to plant a tree unless it is cared for afterwards, and up to the last year or two of his long life he had no greater pleasure than the tending and careful pruning of the trees he had planted. The result is that the trees at Tortworth are now models of good cultivation which can be matched only in the Kew Arboretum.

When I began to study the Trees of Great Britain, no one gave me more help and encouragement than Lord Ducie, and no other place in England has contributed so much to my knowledge. He enjoyed nothing better than a walk round his trees with anyone who was interested, and, being an active man even when past 80, he was always pressing on to more discoveries in his numerous plantations, to which there seemed to be no end.

When Professor Sargent and the late Professor Asa Gray visited Tortworth together many years ago, he was able to show them three trees of the Pacific States which neither of them had seen in their native country, and which will not live in New England, and the Chilean "Beech" (*Nothofagus obliqua*), raised from a seed which I brought home in 1902, now nearly 40 feet in height, was a source of unfailing pleasure to him to show visitors. His generosity in distributing from his stock to those interested in arboriculture was only exceeded by his love for his trees.

Though many of his friends, among whom his only son the late Lord Moreton, Professor Sargent and Mr. Vicary Gibbs were foremost, pressed him more than once to allow an illustrated catalogue of his life's work to be prepared, he never would consent to it, and it is much to be desired that such a catalogue may now be made as a memorial of a man whose sense of duty to his county, his country and his neighbours was so strong and so consistently followed up in his daily life.

H. J. ELWES.

I spent a few hours at Tortworth in May, 1915, in company with Lord Ducie, and a brief account of some of the more interesting trees appeared in the *Kew Bulletin* for that year (p. 298). Probably the most famous tree at Tortworth is the golden chestnut of California (*Castanopsis chrysophylla*). It was planted by Lord Ducie about 1855, and when I measured it in 1915 it was 30 feet high and 3 feet 7 inches in girth of trunk. It has always been the finest tree in England and, having borne fertile seeds for nearly thirty years past, is the parent of many trees in gardens now, including most of those at Kew.

Lord Ducie was one of the few amateurs of the present time who took an interest in and planted oaks, and Tortworth in consequence possesses a number of rare trees unrivalled elsewhere in size and development. Amongst them may be mentioned *Q. macedonica*, *Q. Kelloggii*, *Q. glauca*, *Q. conferta*, *Q. Mirbeckii*, *Q. imbricaria* and *Q. Aegilops*. A tree in which Lord Ducie took great interest was the true *Juglans rupestris*, a very elegant walnut from the S.W. United States, rare in English gardens and nowhere so fine as at Tortworth. Of conifers Lord Ducie had a splendid general collection, admirably grown, and of the rarer species his *Pseudolarix Fortunei* and *Torreya californica* are particularly noteworthy.

For many years Lord Ducie was the doyen of tree cultivators in the British Isles, and even in Europe there was only one whose length of experience approached his—Mr. Gaston Allard, of Angers, who died in January, 1918.

W. J. B.

Miss Matilda Smith, Artist in the Herbarium, retired from the public service on 29 July, 1921, in conformity with the regulations prescribed for members of the Civil Service. The devotion to duty which has marked Miss Smith's tenure of her post during the past twenty-three years has placed Kew under an obligation it is not easy to assess. Moreover, the labours of Miss Smith, as an official member of the Herbarium staff, constitute but a small portion of her services to this institution.

When in 1878 the late Mr. W. H. Fitch (*K.B.* 1915, p. 277), gave up his work in connection with the *Botanical Magazine*, the editorship of which was part of the duty of the Director, the late Sir Joseph Hooker was under the necessity of endeavouring

to secure the services of a competent successor. As a temporary measure Lady Thiselton-Dyer, with much public spirit, came to her father's assistance and supplied drawings for the *Magazine* during the period 1878–83. But the task of finding a permanent artist for this important serial, capable of rendering the service required and willing to do so in return for the pittance which public opinion forty years ago regarded as an adequate remuneration for work of a scientific character, was no easy matter. Sir Joseph learned that Miss Smith, a niece of Lady Eastlake and therefore a cousin, thrice removed, of his own, was endowed with a natural taste for plant-portraiture and had already acquired considerable skill in this branch of art. Sir Joseph was fortunately able to persuade Miss Smith to come to Kew where, from 1878 onward, he trained her himself to make and draw floral dissections.

If Miss Smith was fortunate in having so competent a teacher, the latter was to be congratulated in finding so apt a pupil. From 1881 onwards Miss Smith became artist and lithographer, at plate 1354, for the *Icones Plantarum*, a serial prepared under the superintendence of the Herbarium staff and edited by the Director. Two years later Miss Smith became also artist for the *Botanical Magazine*, her work for which began with plate 6386.

In addition to this work for the *Icones Plantarum*, performed on behalf of the Bentham Trustees, and for the *Botanical Magazine*, executed on behalf of the publishers of that journal, Miss Smith has prepared, since she first began her duties at Kew, many coloured portraits of living plants and drawings from herbarium specimens for the herbarium collection, as well as numerous figures to illustrate taxonomic and floristic botanical works and papers.

Though Miss Smith thus became an essential and integral element in the institution, it was not until twenty years after her response to Sir Joseph Hooker's invitation that her existence was recognised officially. As from 1 April, 1898, Miss Smith, on the recommendation of Sir W. T. Thiselton-Dyer, was appointed Artist in the Herbarium under an arrangement which left her relationship with the Bentham Trustees and the *Botanical Magazine* unaffected and still permitted her to prepare illustrations for botanical work issued independently.

Though in the technical sense of the term Miss Smith has thus been a Civil Servant for rather less than a quarter of a century, her loyal and single-minded devotion to botanical science as the Artist at Kew covers a period of forty years. Miss Smith carries with her on her retirement the sincere hope of her former colleagues that she may be long spared to enjoy the leisure she has so fully earned.

Miss Smith was elected an Associate of the Linnean Society on November 3rd, in recognition of her services to Botanical Science.

Mr. Arthur Kellett, for seven years Artist and Photographer on the staff of the Ministry of Agriculture, Dominion of Canada, and during the war a member of the Royal (Canadian) Air Force, has been appointed by the Minister of Agriculture and Fisheries, as from 19 September, 1921, Artist in the Herbarium at Kew, in succession to Miss M. Smith.

Major Kenneth William Braid, B.A. (Cantab.), B.Sc. (Aberd.), A.I.C., has been appointed by the Minister of Agriculture and Fisheries, as from 3 October, 1921, an Assistant in the Herbarium at Kew.

Mr. A. H. Kirby, B.A., Assistant Director of Agriculture, Southern Nigeria (*K.B.*, 1913, p. 125), has been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, Director of Agriculture, Mr. O. E. Whitehead a District Agricultural Officer, and Mr. A. R. Hildebrand, Plant Import Inspector, in the Department of Agriculture, Tanganyika Territory.

Mr. T. H. Marshall, formerly Seed Collector in the Royal Botanic Gardens, Kew, has been appointed Head Gardener, Dar-es-Salaam, Tanganyika Territory, on the recommendation of the Director of Agriculture, Uganda.

Mr. F. Ashby, Microbiologist in the Agricultural Department, Jamaica, has been appointed by the Secretary of State for the Colonies Mycologist in the Imperial Department of Agriculture for the West Indies.

The following appointments in the Department of Agriculture, Trinidad, have been made by the Secretary of State for the Colonies, on the recommendation of Kew :—

Mr. A. G. Bailey, B.A., formerly a member of the gardening staff of the Royal Botanic Gardens, Kew, Economic Botanist; Mr. F. Stell, Mycologist in the Department of Science and Agriculture, British Guiana (*K.B.*, 1919, p. 447), Mycologist, Trinidad.

Alpine Plants on Snowdon.—For some considerable time Mr. A. K. Bulley, of Ness, Neston, near Birkenhead, has been anxious to ensure that the experimental cultivation of Alpine plants from all parts of the world might be attempted in some suitable spot in England or Wales where the conditions approach those in which such plants grow naturally. The experiment is desirable as a concomitant of the corresponding attempt arranged for in the Highlands of Scotland by the Regius Keeper of the Royal Botanic Garden, Edinburgh.

After consultation with the Director of Kew, Mr. Bulley came to the conclusion that the general locality most suitable for the purpose is Snowdonia. Having further discussed the project with Professor Farmer, F.R.S., whose knowledge of Snowdonia is unrivalled, and after visiting and carefully inspecting the range in person, Mr. Bulley resolved to adopt the suggestion of Professor Farmer as to the piece of ground on Snowdon to be used. Through the kindness of the Vaynol Trustees, permission to undertake the experimental cultivation of Alpine plants on this piece of ground has been granted, and on 24 September last the Director and Mr. W. Irving were indebted to the courtesy of Mr. Bulley for the opportunity of being present at and taking part in the initial planting of a certain number of Alpine species and the sowing of a certain number of seeds of high-level plants.

The Flora of Madras.*—We welcome the appearance of the fourth part of Mr. Gamble's Flora of the Presidency of Madras. This part deals with the families *Rubiaceae* to *Sapotaceae*, and also includes the *Ebenaceae* as far as the description of the genus *Diospyros*; the key to the species of this genus and their enumeration will begin the fifth part of the work. Brief descriptions of several new varieties are published, and we notice the following new specific names or new combinations:—*Oldenlandia nitida*, *O. caerulea*, *O. articularis*, *O. sisaparensis*, and *O. albonervia*, for species transferred from *Hedyotis*; *Mussaenda glabrata*, *M. laxa*, and *M. hirsutissima*, species founded by Mr. Hutchinson on plants formerly regarded as varieties of *M. frondosa*; *Randia Brandisii* (= *R. tomentosa*, Wight & Arnott, not of Blume); *Tricalysia sphaerocarpa* and *T. apiocarpa*, transferred from *Diplospora*; *Plectronia ficiformis* and *P. pergracilis* (= *Canthium ficiforme*, Hook. f., and *C. pergracile*, Bourd.); *Pavetta zeylanica* (= *P. hispidula*, var. *zeylanica*, Hook. f.); *Stylocoryne lucens*, *S. canarica*, and *S. nilagirica*, transferred from *Webera*; *Anaphalis subdecurrens* (= *Gnaphalium subdecurrens*, DC.), and *A. Lawii* (= *A. oblonga*, DC., var. *Lawii*, Hook. f.); *Campanula Wightii* (= *C. ramulosa*, Wight, not of Wallich); and *Isonandra montana*, based on *I. Wightiana*, A. DC., var. *montana*, Thwaites.

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